SCHOOL OF MATH

CLASS 13

Two-Digit Addition

Without Regrouping

Strong foundations. Confident learners.



Build a brighter future with math.

Discover the joy of understanding, one step at a time.

Place Value • Addition Strategies • Problem Solving

DISCOVER SCHOOL OF MATH

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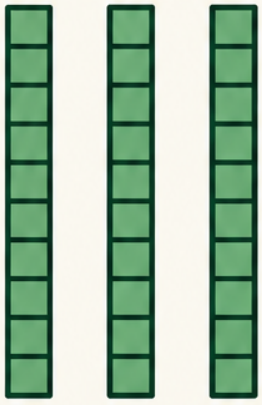
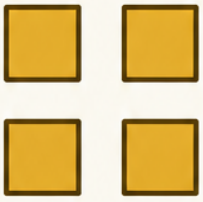
SCHOOL OF MATH

Understanding Tens and Ones

Every digit has a place and a value.

CLASS 13

34

TENS	ONES
 3 tens = 30	 4 ones = 4

34 = 30 + 4

34 has 3 tens and 4 ones.

10 ones make 1 ten.

Two-Digit Addition Without Regrouping

Image 1 practice: Tens and ones: read each place

Q1. In 17, which digit is in the tens place?

Q2. How many tens and ones are in 41?

Q3. What is the value of the 6 in 63?

Q4. Write 80 as tens and ones. Why do we write the zero?

Q5. A number has 9 tens and 5 ones. Write the number and explain both digits.

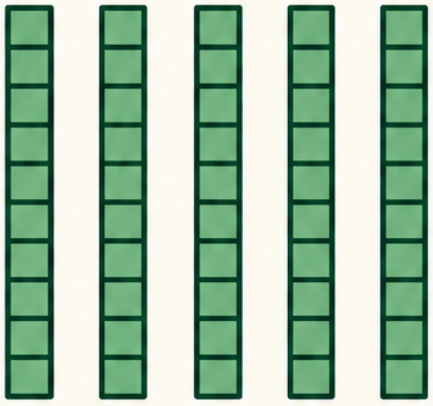
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Understanding Tens and Ones

Every digit has a place and a value.

CLASS 13

52

TENS	ONES
 5 tens = 50	 2 ones = 2

52 = 50 + 2

52 has 5 tens and 2 ones.

10 ones make 1 ten.

Two-Digit Addition Without Regrouping

Image 2 practice: Tens and ones: break a number apart

Q6. Complete: 28 = 20 + __.

Q7. Write 45 as a tens value plus a ones value.

Q8. Which matches 61: 6 + 1 or 60 + 1? Explain.

Q9. A child writes 73 = 7 + 3. Correct the mistake.

Q10. A mystery number has a tens part of 90 and a ones part that is 2 more than 4. What is it?

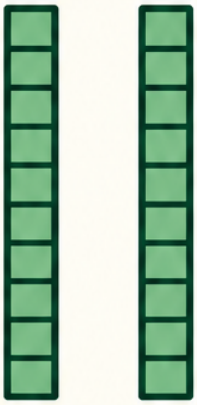
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Understanding Tens and Ones

Every digit has a place and a value.

CLASS 13

26

TENS	ONES
 2 tens = 20	 6 ones = 6

26 = 20 + 6

26 has 2 tens and 6 ones.

10 ones make 1 ten.

Two-Digit Addition Without Regrouping

Image 3 practice: Tens and ones: build and explain

Q11. What number is 1 ten and 8 ones?

Q12. Draw a model for 43 using a line for each ten and a dot for each one.

Q13. A model has 6 tens rods and no ones cubes. What number does it show?

Q14. Maya draws 5 tens rods and 9 ones cubes but writes 95. What should she write?

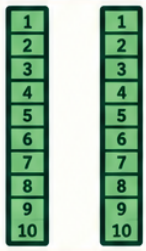
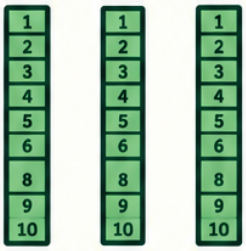
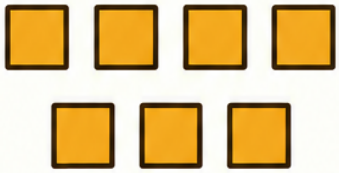
Q15. Which model shows the greater number: 7 tens and 2 ones, or 2 tens and 7 ones? Explain.

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Representing Numbers with Models

Use tens rods and ones squares to add.

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Number	Tens	Ones
23		
+ 14		
37		

2 tens + 1 ten = 3 tens | 3 ones + 4 ones = 7 ones

23 + 14 = 37

Combine tens with tens and ones with ones.

Two-Digit Addition Without Regrouping

Image 4 practice: Join numbers with models

Q16. Model 11 + 12 with tens rods and ones cubes. How many are there altogether?

Q17. Draw a model for 22 + 15. State the total number of rods and loose cubes.

Q18. Join a model of 31 to a model of 24. Write the addition sentence.

Q19. Two models show 42 and 26. After joining them, explain why you do not need to trade any ones.

Q20. A child joins models of 53 and 14 but counts each tens rod as just one. Find the correct total and explain what each rod is worth.

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Adding Tens and Ones Separately

Break each number into tens and ones.

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32 + 25

$32 = 30 + 2$ (30: tens, 2: ones)

$25 = 20 + 5$ (20: tens, 5: ones)

1. Add the tens

$$30 + 20 = 50$$

2. Add the ones

$$2 + 5 = 7$$

3. Combine the parts

$$50 + 7 = 57$$

$$32 + 25 = 57$$

Add tens to tens and ones to ones.

Two-Digit Addition Without Regrouping

Image 5 practice: Add tens and ones separately

Q21. Break 20 and 13 into tens and ones, then add.

Q22. Use expanded form to find 21 + 17.

Q23. Find 34 + 22 by adding the tens values first and the ones values next.

Q24. Complete the parts for 45 + 31: tens __ + __; ones __ + __; total __.

Q25. A student says 62 + 27 = 17 because 6 + 2 + 2 + 7 = 17. Explain the place-value mistake and find the sum.

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Aligning Numbers Vertically

Write tens under tens and ones under ones.

CLASS 13

	TENS	ONES
	4	2
+	3	5
	7	7

Tens column

4 tens + 3 tens = 7 tens

Ones column

2 ones + 5 ones = 7 ones

42 + 35 = 77

Keep each digit in its correct place.

Two-Digit Addition Without Regrouping

Image 6 practice: Line up tens under tens

Q26. Write 13 + 15 vertically, keeping tens under tens and ones under ones. Solve.

Q27. Set up 24 + 21 in two columns. Which digits belong in the ones column? Then add.

Q28. Solve 36 + 12 vertically. Explain where you write the 8 in your answer.

Q29. Add 40 + 37 vertically. Explain what the 0 does in the ones column.

Q30. A child puts the 2 of 23 under the 4 of 54. Fix the alignment and solve 54 + 23.

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Adding the Ones First

Start with the ones, then add the tens.

CLASS 13

	TENS	ONES
	4	6
+	2	3
	6	9

1. Add the ones

$6 + 3 = 9$

Write 9 in the ones column.

2. Add the tens

$4 + 2 = 6$

Write 6 in the tens column.

$$46 + 23 = 69$$

Begin on the right: ones first, tens next.

Two-Digit Addition Without Regrouping

Image 7 practice: Add the ones first

Q31. Add 12 + 16. Say the ones fact before the tens fact.

Q32. Find 25 + 23, starting with the ones.

Q33. Find 43 + 15. Explain why the tens digit of the answer is 5.

Q34. Solve 61 + 28. Write how many tens and how many ones are in the answer.

Q35. Complete the missing ones digit: 72 + 1☐ = 89. Explain how the ones column helps.

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When Regrouping Is Not Needed

If the ones total less than 10, no new ten is formed.

CLASS 13

	TENS	ONES
	5	2
+	1	6
	6	8

1. Check the ones

$2 + 6 = 8$

8 is less than 10: keep 8 ones.

2. Add the tens

$5 + 1 = 6$

5 tens + 1 ten = 6 tens.

$$52 + 16 = 68$$

No regrouping is needed in this example.

Two-Digit Addition Without Regrouping

Image 8 practice: Check that no regrouping is needed

Q36. Before solving 30 + 24, check whether either column needs regrouping.

Q37. Explain why 42 + 17 can be solved without regrouping. Then find the sum.

Q38. Find 50 + 36. Explain why the zero does not change the number of ones.

Q39. A child gets 89 for 65 + 14 after adding an extra ten. Find the correct sum and explain the error.

Q40. Find two different two-digit numbers that add to 98 without regrouping. Neither number may end in 0. Show one possible answer.

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Adding on a Number Line

Start at 35 and move right to add 23.

CLASS 13

$$35 + 23 = 58$$

1. Add the tens: +20



$$35 + 20 = 55$$

2. Add the ones: +3



$$55 + 3 = 58$$

The second number line zooms in to show ones.

$$23 = 20 + 3$$

$$35 + 23 = 58$$

Move right when adding positive numbers.

Two-Digit Addition Without Regrouping

Image 9 practice: Make tens jumps and ones jumps

Q41. Start at 14 and make one jump of 10 to the right. Where do you land?

Q42. Use a number line for 22 + 16. Show one jump of 10 and six jumps of 1.

Q43. For 31 + 27, fill the landing points: 31 → __ → __ → 58. The first two jumps are +10 each. What is the last jump?

Q44. Show the landing points when adding 24 to 45 with two tens jumps and then four ones.

Q45. A number-line path begins at 63, lands at 73, then 83, and ends at 89. What number was added? Write the full addition sentence.

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Solving Addition Word Problems

Read, choose an operation, and solve.

CLASS 13

A class has 24 pencils. The teacher brings 13 more pencils. How many pencils are there altogether?



1. Find the information

Pencils in the class: **24**
More pencils: **13**

2. Add the amounts

$$24 + 13$$

Ones: $4 + 3 = 7$
Tens: $2 + 1 = 3$

3. Answer the question

$$24 + 13 = 37$$

There are **37** pencils altogether.

Check: $20 + 10 = 30$ and $4 + 3 = 7$.

Include the unit in your answer: **pencils**.

Two-Digit Addition Without Regrouping

Image 10 practice: Turn a story into addition

Q46. Nora has 12 red beads and 14 blue beads. How many beads does she have altogether?

Q47. A basket holds 23 apples. A farmer puts in 15 more. How many apples are in the basket now?

Q48. A library shelf has 41 books. A second shelf has 26 books. How many books are on the two shelves?

Q49. A toy car travels 32 centimeters on one path and 16 centimeters on the next. How far does it travel in all?

Q50. Leo has 35 cards. Ana has 12 more cards than Leo. How many cards does Ana have? Explain why the answer is not 12.

Two-Digit Addition Without Regrouping

Homework review: R1–R5

Homework: review place value and addition without regrouping.

R1. Image 1: In 57, what is the value of the 5? Explain using tens and ones.

R2. Image 2: Write 86 in expanded form. Explain why 8 + 6 is not the correct expanded form.

R3. Image 3: Draw a model for 48 using rods for tens and dots for ones. How many rods and dots do you need?

R4. Image 4: Two models show 14 and 22. Join them. How many tens and ones are there altogether, and what is the total?

R5. Image 5: Find 33 + 16 by adding the tens values and ones values separately.

Two-Digit Addition Without Regrouping

Homework review: R6–R10

Homework: review place value and addition without regrouping.

R6. Image 6: Set up 24 + 32 vertically and solve. Which digits must line up in the ones column?

R7. Image 7: Solve 51 + 27, starting with the ones. Explain what each digit of the answer means.

R8. Image 8: Check both columns before solving 74 + 15. Explain why no regrouping is needed, then find the sum.

R9. Image 9: Start at 41 on a number line and add 36 using tens jumps followed by ones. List the landing points after each tens jump and the final total.

R10. Image 10: Mia has 25 cards. Sam has 13 more cards than Mia. How many cards does Sam have? Explain which two numbers you add.

Two-Digit Addition Without Regrouping

Homework word problems: W1–W5

Homework: solve the word problems in order and show your work.

W1. A child has 12 red beads and 13 blue beads. How many beads does the child have altogether?

W2. A classroom shelf has 21 books. The teacher adds 16 more. How many books are on the shelf now?

W3. One basket holds 34 apples and another holds 22 apples. How many apples are there in all? Show the tens and ones in your answer.

W4. The first group at a school show uses 42 tickets and the second uses 25. How many tickets do they use altogether? Show the total using tens jumps and then ones on a number line.

W5. A ribbon is 31 centimeters long. A second ribbon is 26 centimeters longer than the first. How long is the second ribbon?

Two-Digit Addition Without Regrouping

Homework word problems: W6–W9

Homework: solve the word problems in order and show your work.

W6. A toy shelf starts with 43 cars. After a delivery, it has 68 cars. How many cars arrived? Write an addition sentence to check.

W7. A club collects 11 cans on Monday, 23 on Tuesday, and 14 on Wednesday. How many cans does the club collect in all?

W8. Mina has 22 stickers. Owen has 11 more stickers than Mina. How many stickers do they have altogether?

W9. A class makes 32 red paper flowers and 21 blue paper flowers. Families donate 15 more flowers. The class needs 65 flowers for a display. How many flowers are there in all, and how many extra flowers can be saved?